

What is claimed is:

- 1 1. A method for determining the position of a game ball during an athletic competition  
2 on a playing field having defined boundaries, comprising the steps of:  
3 transmitting a first signal from the game ball; and  
4 receiving and analyzing said first signal, to determine the position of the game ball.
- 1 2. The method of Claim 1 further comprising the step of:  
2 communicating the game ball's position to a game official.
- 1 3. The method of Claim 2 further comprising the step of:  
2 displaying the game ball's position on a visual display.
- 1 4. The method of Claim 2 further comprising the steps of:  
2 selectively transmitting a second signal;  
3 receiving said second signal;  
4 recording the game ball's position in response to said second signal; and  
5 transmitting a third signal to communicate the game ball's position to a game official.
- 1 5. The method of Claim 4 further comprising the step of:  
2 displaying the game ball's position on a visual display.
- 1 6. The method of Claim 4 further comprising the steps of:  
2 comparing the game ball's position, as determined by said first signal, to the position  
3 recorded in response to said second signal; and  
4 providing the game official directions to move the game ball to a location described  
5 by the position recorded in response to said second signal.
- 1 7. The method of Claim 6 wherein providing directions to said game official uses  
2 audible signals.

1 8. The method of Claim 6 wherein providing directions to said game official uses visual  
2 signals.

1 9. The method of Claim 1 further comprising the steps of:  
2 determining if the game ball has crossed a boundary of the playing field; and  
3 communicating an out of boundary alert to a game official.

1 10. The method of Claim 9 wherein communicating an out of boundary alert to said game  
2 official uses audible signals.

1 11. The method of Claim 9 wherein communicating an out of boundary alert to said game  
2 official uses visual signals.

1 12. A method of determining the position of a game ball during an athletic competition on  
2 a playing field comprising the steps of:

3 transmitting a signal from the game ball;  
4 receiving and analyzing said signal, using a microprocessor, to determine the position  
5 of said game ball; and  
6 communicating the game ball's position to a game official.

1 13. A method of determining the position of a game ball during an athletic competition on  
2 a playing field comprising the steps of:

3 transmitting a signal from the game ball;  
4 receiving and analyzing said signal, using a microprocessor, to determine the position  
5 of said game ball;  
6 continuously recording the game ball's position;  
7 attaching and storing a time stamp to the recorded position of said game ball; and  
8 providing the game ball's position for a selected time in response to a query.

- 1 14. The method of Claim 13 further comprising the step of:  
2 graphically displaying the game ball's position at a remote terminal.
- 1 15. The method of Claim 14 wherein the game ball's position is graphically displayed at a  
2 remote terminal located with a game official.
- 1 16. A method of determining the position of a game ball during an athletic competition on  
2 a playing field comprising the steps of:  
3 transmitting a first signal from a player carrying the game ball;  
4 receiving and analyzing said first signal, to determine the position information of the  
5 game ball; and  
6 communicating the game ball's position to a game official.
- 1 17. A system for determining the position of a game ball during an athletic competition  
2 on a playing surface having defined boundaries, comprising:  
3 a first transmitter positioned in the game ball, for transmitting a first signal;  
4 a first antenna for detecting said first signal;  
5 a first receiver for receiving said first signal;  
6 a microprocessor for determining the position of the game ball in response to said first  
7 signal; and  
8 means for recording said position.
- 1 18. The system of Claim 17 further comprising means for communicating the game ball's  
2 position to a game official.

1 19. The system of Claim 18 wherein said means for communicating the game ball's  
2 position comprises:

3 a second transmitter for transmitting a second signal, said second signal containing  
4 the game ball's position; and  
5 display means for graphically displaying the game ball's position contained in said  
6 second signal.

1 20. The system of Claim 17 further comprising control means for selectively directing  
2 said microprocessor to record the game ball's position for a specific point in time.

1 21. The system of Claim 20 wherein said control means comprises a transmitter that is  
2 selectively operable to send a control signal to said microprocessor and wherein said  
3 microprocessor is programmed to record the game ball's position at the time said transmitter  
4 sends said control signal.

1 22. The system of Claim 17 further comprising:  
2 said microprocessor comprising a first clock for associating first time information  
3 with said position;  
4 a second transmitter for transmitting a second signal that contains said position;  
5 a display/receiver comprising a second clock for providing second time information;  
6 means for synchronizing said second clock with said first clock;  
7 means for selectively recording said second time information;  
8 means for communicating a third signal to said microprocessor, said third signal  
9 containing said second time information; and  
10 wherein said second transmitter transmits said second signal in response to said third  
11 signal.

1 23. Apparatus for determining the position of a game ball on a playing surface during an  
2 athletic competition, comprising:  
3 a first transmitter located in the uniform of a player carrying the game ball, for  
4 transmitting a first signal;  
5 a first antenna for detecting said first signal;  
6 a first receiver for receiving said first signal; and  
7 a microprocessor for determining the position of the game ball in response to said first  
8 signal.

1 24. A football for use with a system for determining the position of a game ball on a  
2 playing surface during an athletic competition, said football including a transmitter mounted  
3 therein for sending a signal for being triangulated by a computer that stores and records  
4 position information for said football.

1 25. A display/receiver for use with a system for determining the position of a game ball  
2 on a playing surface during an athletic competition, said display/receiver comprising:  
3 a receiver for receiving a signal, said signal modulated to convey the game ball's  
4 location;  
5 a microprocessor for interpreting the game ball's location modulated in said signal;  
6 and  
7 means for communicating the game ball's location to a game official.

1 26. The display/receiver of claim 25 wherein said means for communicating the game  
2 ball's location communicates said location visually.

1 27. The display/receiver of claim 25 wherein said means for communicating the game  
2 ball's location communicates said location audibly.